Discount Rate Sensitivity

	1% Decrease 5.75%	Current Rate 6.75%	1% Increase 7.75%
Net Pension Liability	\$96,480,850	\$33,742,044	(\$18,955,092)

Classes of Plan Members Covered

The June 30, 2018 valuation was performed using census data provided by INPRS as of June 30, 2017. Standard actuarial techniques were used to roll forward the total pension liability computed as of June 30, 2017 to the June 30, 2018 measurement date using actual benefit payments during that period of time.

Number as of June 30, 2017	
1. Currently Receiving Benefits:	
Retired Members, Disabled Members, and Beneficiaries	365
2. Inactive Members Entitled To But Not Yet Receiving Benefits	26
3. Inactive Non-vested Members Entitled to a Refund of Member Contributions	42
4. Active Members	439
Total Covered Plan Members: (1)+(2)+(3)+(4)	872

Money-Weighted Rate of Return

The money-weighted rate of return equals investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. For the fiscal year ending June 30, 2018, the money-weighted return on the plan assets is 9.3%.

Components of Net Pension Liability

As of June 30, 2018	
Total Pension Liability	\$ 547,694,452
Fiduciary Net Position	513,952,408
Net Pension Liability	\$ 33,742,044
Ratio of Fiduciary Net Position to Total Pension Liability	93.84%



SCHEDULE OF CHANGES IN THE TOTAL PENSION LIABILITY AND PLAN FIDUCIARY NET POSITION

Fiscal Year Ending June 30	2013	2014	2015	2016	2017	2018
Total Pension Liability						
Total Pension Liability - beginning	\$437,854,459	\$453,109,893	\$464,854,573	\$468,944,751	\$501,125,713	\$523,735,050
Service Cost (SC), beginning-of-year	16,084,589	15,301,638	15,283,088	13,869,891	14,762,102	14,885,621
Interest Cost, including interest on SC	30,047,576	30,992,602	31,753,468	31,889,331	34,082,760	35,567,044
Experience (Gains)/Losses	(13,602,915)	(16,025,822)	8,410,750	7,181,935	(3,106,524)	(3,090,250)
Assumption Changes	185,587	0	(31,925,306)	0	(1,212,930)	0
Plan Amendments	0	0	0	0	0	0
Actual Benefit Payments	(17,579,537)	(18,527,788)	(19,431,822)	(20,921,745)	(22,099,240)	(23,622,253)
Member Reassignments	120,134	4,050	0	0	0	0
Service Purchases	0	0	0	161,550	183,169	219,240
Net Change in Total Pension Liability	15,255,434	11,744,680	4,090,178	32,180,962	22,609,337	23,959,402
(a) Total Pension Liability - ending	\$453,109,893	\$464,854,573	\$468,944,751	\$501,125,713	\$523,735,050	\$547,694,452
Plan Fiduciary Net Position						
Plan Fiduciary Net Position – beginning	\$262,325,682	\$375,752,562	\$432,729,729	\$437,352,498	\$441,790,144	\$475,054,556
Contributions – employer	111,417,613	20,894,700	21,020,000	16,946,301	16,823,600	15,117,494
Contributions – non-employer	0	0	0	0	0	0
Contributions – member	2,631,374	2,855,956	3,292,222	3,239,092	3,467,843	3,417,904
Net investment income	16,963,156	51,896,235	(93,406)	5,322,425	35,195,878	44,103,829
Actual benefit payments	(17,579,537)	(18,527,788)	(19,431,822)	(20,921,745)	(22,099,240)	(23,622,253)
Net member reassignments	120,134	4,050	0	0	0	0
Administrative expense	(125,860)	(145,986)	(164,225)	(148,427)	(123,669)	(119,122)
Other	0	0	0	0	0	0
Net change in Plan Fiduciary Net Position	113,426,880	56,977,167	4,622,769	4,437,646	33,264,412	38,897,852
(b) Plan Fiduciary Net Position - ending	\$375,752,562	\$432,729,729	\$437,352,498	\$441,790,144	\$475,054,556	\$513,952,408
Net Pension Liability - ending, (a) - (b)	\$77,357,331	\$32,124,844	\$31,592,253	\$59,335,569	\$48,680,494	\$33,742,044

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.



SCHEDULE OF THE NET PENSION LIABILITY

Fiscal Year Ending June 30	2013	2014	2015	2016	2017	2018
Total Pension Liability	\$453,109,893	\$464,854,573	\$468,944,751	\$501,125,713	\$523,735,050	\$547,694,452
Plan Fiduciary Net Position	375,752,562	432,729,729	437,352,498	441,790,144	475,054,556	513,952,408
Net Pension Liability	\$77,357,331	\$32,124,844	\$31,592,253	\$59,335,569	\$48,680,494	\$33,742,044
Ratio of Plan Fiduciary Net Position to Total Pension Liability	82.93%	93.09%	93.26%	88.16%	90.71%	93.84%
Covered-employee payroll ¹	\$47,594,849	\$46,041,085	\$48,582,165	\$51,381,964	\$54,755,206	\$53,350,037
Net Pension Liability as a percentage of covered-employee payroll	162.53%	69.77%	65.03%	115.48%	88.91%	63.25%

¹ As provided by INPRS.

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.



SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending June 30	2013	2014	2015	2016	2017	2018
Actuarially Determined Contribution ¹	\$25,458,485	\$27,647,672	\$18,864,455	\$17,485,282	\$14,334,913	\$14,852,650
Actual employer contributions	\$111,417,613	\$20,894,700	\$21,020,000	\$16,946,301	\$16,823,600	\$15,117,494
Annual contribution (deficiency) / excess	\$85,959,128	(\$6,752,972)	\$2,155,545	(\$538,981)	\$2,488,687	\$264,844
Covered-employee payroll ²	\$47,594,849	\$46,041,085	\$48,582,165	\$51,381,964	\$54,755,206	\$53,350,037
Actual contributions as a percentage of covered-employee payroll	234.10%	45.38%	43.27%	32.98%	30.73%	28.34%

¹ Actuarially determined contribution rate was developed in the actuarial funding valuation completed one year prior to the fiscal year.

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.

This rate was applied to the actual covered employee payroll for the fiscal year to determine the contribution amount.

² As provided by INPRS.



SCHEDULE OF MONEY-WEIGHTED RETURNS

For Fiscal Year Ending June 30	Money-Weighted Return
2018	9.3%
2017	8.0%
2016	1.2%
2015	(0.1%)
2014	13.7%
2013	5.2%

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results were provided by INPRS.

APPENDIX TABLE OF CONTENTS



<u>Appendix</u>	<u>1</u>	<u>Page</u>
Appendix A	- Membership Data	38
	Schedules of valuation data classified by various categories of members.	
Appendix B	– Summary of Plan Provisions	46
	A summary of the current benefit structure, as determined by the provisions of govern law on June 30, 2018.	ing
Appendix C	- Summary of Actuarial Methods and Assumptions	50
	A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.	
Appendix D	- Glossary of Actuarial Terms	55
	A glossary of actuarial terms used in the valuation report.	



MEMBER DATA RECONCILIATION For June 30, 2017 Data used in the June 30, 2018 Valuation

	Active Members	Inactive Vested	Inactive Nonvested	Disabled	Retired	Beneficiary	Total
1. As of June 30, 2016	402	67	39	2	247	101	858
Reclassify actives over service cap	42	(42)	0	0	0	0	0
Adjusted Count	444	25	39	2	247	101	858
2. Data Adjustments							
New Participants	22	0	0	0	0	0	22
Rehires	3	(2)	(1)	0	0	0	0
Terminations:							
Not Vested	(5)	0	5	0	0	0	0
Deferred Vested	(6)	6	0	0	0	0	0
Disability	(1)	0	0	1	0	0	0
Retirements	(18)	(3)	0	0	21	0	0
Refund / Benefits Ended	0	0	(3)	0	0	0	(3)
Deaths:							
With Beneficiary	0	0	0	0	(6)	6	0
Without Beneficiary	0	0	0	(1)	(2)	(4)	(7)
Data Corrections	0	0	2	0	0	0	2
Net Change	(5)	1	3	0	13	2	14
3. As of June 30, 2017 ¹	439	26	42	2	260	103	872

¹ The valuation results were calculated using the prior year's census data and were adjusted for certain activity during fiscal year.

June 30, 2018 Actuarial Valuation Judges' Retirement System



SUMMARY OF MEMBERSHIP DATA

Valuation Date	,	June 30, 2017		June 30, 2018	% Change
Date of Membership Data ¹		July 1, 2016		July 1, 2017	
ACTIVE MEMBERS					
Number of Active Members		402		439	9.2%
Annual Membership Data Salary ²	\$	52,124,216	\$	57,446,198	10.2%
Anticipated Covered Pay for Next Fiscal Year ³	\$	55,850,310	\$	54,470,388	(2.5%)
Active Member Averages					
Age		54.6		56.0	2.5%
Service		9.1		10.4	14.4%
Annual Membership Data Salary	\$	129,662	\$	130,857	0.9%
INACTIVE MEMBERS					
Number of Members					
Inactive Vested		67		26	(61.2%)
Inactive Non-Vested	_	39	_	42	7.7%
Total		106		68	(35.8%)
Inactive Vested Member Averages					
Age		62.4		57.7	(7.5%)
Service		19.6		14.7	(25.0%)
RETIREES, DISABLEDS, AND BENEFICIARIE	S				
Number of Members					
Retired		247		260	5.3%
Disabled		2		2	0.0%
Beneficiaries		101		103	2.0%
Total		350		365	4.3%
Annual Benefits					
Retired	\$	N/A	\$	19,722,653	N/A
Disabled		N/A		123,612	N/A
Beneficiaries		N/A		2,790,837	N/A
Total	\$	21,465,258	\$	22,637,102	5.5%

¹The valuation results were calculated using the prior year's census data and were adjusted for certain activity during fiscal year.

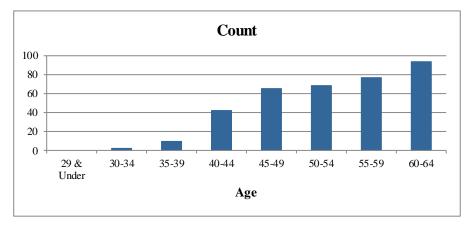
² Annualized for actives with less than a year of service. Actives with no salary provided are defaulted to the state provided salary for their job title.

³ Actual pay for contributing members with less than 22 years of service for the fiscal year ending on the valuation date, rolled forward at the known pay increase of 2.1%.



ACTIVE MEMBERS As of June 30, 2017 for the June 30, 2018 Valuation

_	Co	unt of Member	rs	FY 2017 Ar	FY 2017 Annual Membership Data Salary						
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>					
29 & Under	0	0	0	0	0	0					
30-34	1	1	2	109,650	137,062	246,712					
35-39	6	4	10	685,312	466,012	1,151,324					
40-44	20	22	42	2,576,768	2,659,008	5,235,776					
45-49	44	21	65	5,780,014	2,631,594	8,411,608					
50-54	46	22	68	6,058,144	2,741,244	8,799,388					
55-59	53	24	77	7,175,850	2,988,560	10,164,410					
60-64	70	23	93	9,237,984	3,030,760	12,268,744					
65 & Up	<u>61</u>	<u>21</u>	<u>82</u>	8,325,358	2,842,878	11,168,236					
Total	301	138	439	\$ 39,949,080	\$ 17,497,118	\$ 57,446,198					







AGE AND SERVICE DISTRIBUTION As of June 30, 2017 for the June 30, 2018 Valuation

Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
29 &	Number	0	0	0	0	0	0	0	0	0
Under	Total Salary	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
0 0	Average Sal.	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
30-34	Number	2	0	0	0	0	0	0	0	2
	Total Salary	\$ 246,712	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 246,712
	Average Sal.	\$ 123,356	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 123,356
35-39	Number	9	0	1	0	0	0	0	0	10
	Total Salary	\$ 1,041,674	\$ 0	\$ 109,650	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,151,324
	Average Sal.	\$ 115,742	\$ 0	\$ 109,650	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 115,132
40-44	Number	30	8	4	0	0	0	0	0	42
	Total Salary	\$ 3,700,680	\$ 986,848	\$ 548,248	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 5,235,776
	Average Sal.	\$ 123,356	\$ 123,356	\$ 137,062	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 124,661
45-49	Number	31	24	9	1	0	0	0	0	65
	Total Salary	\$ 4,029,626	\$ 3,121,010	\$ 1,123,910	\$ 137,062	\$ 0	\$ 0	\$ 0	\$ 0	\$ 8,411,608
	Average Sal.	\$ 129,988	\$ 130,042	\$ 124,879	\$ 137,062	\$ 0	\$ 0	\$ 0	\$ 0	\$ 129,409
50-54	Number	24	16	19	5	4	0	0	0	68
	Total Salary	\$ 2,987,956	\$ 2,055,932	\$ 2,521,942	\$ 685,310	\$ 548,248	\$ 0	\$ 0	\$ 0	\$ 8,799,388
	Average Sal.	\$ 124,498	\$ 128,496	\$ 132,734	\$ 137,062	\$ 137,062	\$ 0	\$ 0	\$ 0	\$ 129,403
55-59	Number	17	23	20	11	6	0	0	0	77
	Total Salary	\$ 2,303,246	\$ 2,851,498	\$ 2,604,784	\$ 1,559,104	\$ 845,778	\$ 0	\$ 0	\$ 0	\$ 10,164,410
	Average Sal.	\$ 135,485	\$ 123,978	\$ 130,239	\$ 141,737	\$ 140,963	\$ 0	\$ 0	\$ 0	\$ 132,005
60-64	Number	16	17	20	10	30	0	0	0	93
	Total Salary	\$ 2,028,520	\$ 2,138,170	\$ 2,604,180	\$ 1,366,614	\$ 4,131,260	\$ 0	\$ 0	\$ 0	\$ 12,268,744
	Average Sal.	\$ 126,783	\$ 125,775	\$ 130,209	\$ 136,661	\$ 137,709	\$ 0	\$ 0	\$ 0	\$ 131,922
65 &	Number	6	14	16	14	32	0	0	0	82
Up	Total Salary	\$ 767,548	\$ 1,860,038	\$ 2,165,580	\$ 1,965,680	\$ 4,409,390	\$ 0	\$ 0	\$ 0	\$ 11,168,236
	Average Sal.	\$ 127,925	\$ 132,860	\$ 135,349	\$ 140,406	\$ 137,793	\$ 0	\$ 0	\$ 0	\$ 136,198
Total	Number	135	102	89	41	72	0	0	0	439
	Total Salary	\$ 17,105,962	\$ 13,013,496	\$ 11,678,294	\$ 5,713,770	\$ 9,934,676	\$ 0	\$ 0	\$ 0	\$ 57,446,198
	Average Sal.	\$ 126,711	\$ 127,583	\$ 131,217	\$ 139,360	\$ 137,982	\$ 0	\$ 0	\$ 0	\$ 130,857

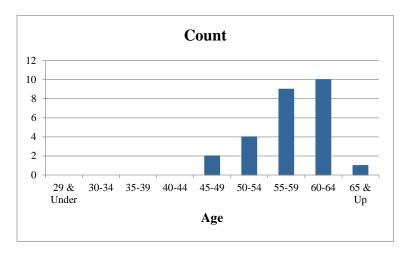
June 30, 2018 Actuarial Valuation

Judges' Retirement System



INACTIVE VESTED MEMBERS As of June 30, 2017 for the June 30, 2018 Valuation

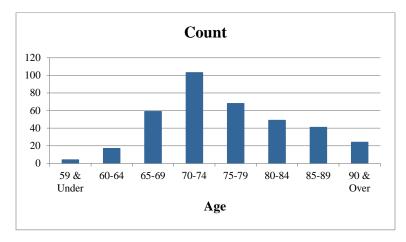
_	Count of Members				
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>		
29 & Under	0	0	0		
30-34	0	0	0		
35-39	0	0	0		
40-44	0	0	0		
45-49	1	1	2		
50-54	1	3	4		
55-59	3	6	9		
60-64	8	2	10		
65 & Up	<u>1</u>	<u>0</u>	<u>1</u>		
Total	14	12	26		

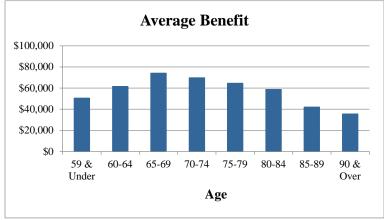




MEMBERS AND BENEFICIARIES RECEIVING BENEFITS As of June 30, 2017 for the June 30, 2018 Valuation

_	Count of Members			<i>_</i>	Annual Benefits		
<u>Age</u>	Male	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	
59 & Under	0	4	4	\$ 0	\$ 201,822	\$ 201,822	
60-64	10	7	17	712,672	332,965	1,045,637	
65-69	49	10	59	3,855,863	512,323	4,368,186	
70-74	83	20	103	6,171,916	1,011,730	7,183,646	
75-79	43	25	68	3,381,605	1,012,269	4,393,874	
80-84	30	19	49	2,253,265	618,908	2,872,173	
85-89	16	25	41	1,080,654	639,706	1,720,360	
90 & Over	<u>5</u>	<u>19</u>	<u>24</u>	<u>345,277</u>	506,127	<u>851,404</u>	
Total	236	129	365	\$ 17,801,252	\$ 4,835,850	\$ 22,637,102	







MEMBERS AND BENEFICIARIES RECEIVING BENEFITS As of June 30, 2017 for the June 30, 2018 Valuation

Schedule of Average Benefit Payments ¹

Years of Credited Service For the Year Ended June 30, 2018 < 10 10 - 14 15 - 19 20 - 24 25 - 29 30 + Total Average Monthly Defined Benefit \$2,035 \$4,437 \$5,613 \$6,180 \$6,656 \$5,168 \$6,640 Average Final Average Salary \$108,346 \$120,668 \$124,939 \$126,707 \$116,646 \$125,976 \$122,254 Number of Benefit Recipients 51 85 74 86 40 29 365

Schedule of Benefit Recipients by Type of Benefit Option ¹

Number of Recipients by Benefit Option

		<u> </u>	j i	
Amount of Monthly Benefit (in dollars)	Joint with 50% Survivor Benefits	Survivors	Disability	Total Benefit Recipients
1 - 500	0	0	0	0
501 - 1,000	0	0	0	0
1,001 - 1,500	0	29	0	29
1,501 - 2,000	0	13	0	13
2,001 - 2,500	3	13	0	16
2,501 - 3,000	9	20	0	29
Over 3,000	248	28	2	278
Total	260	103	2	365

¹Calculated using the prior year census data, adjusted for certain activity during the fiscal year.



MEMBERS AND BENEFICIARIES RECEIVING BENEFITS As of June 30, 2017 for the June 30, 2018 Valuation

Schedule of Retirants and Beneficiaries

	Added	Added to Rolls Re		Removed from Rolls		Rolls - End of Year			
	Number	Annual Benefits ¹	Number	Annual Benefits ¹	Number	Total Annual Benefits ^{1, 2}	Percent Change In Total Annual Benefits	Average Annual Benefit	Percent Change In Average Annual Benefit
2018 ³	22	\$1,723	7	\$309	365	22,637	5.5%	62,019	1.1%
2017 3	9	696	10	509	350	21,465	2.4	61,329	2.7
2016 ³	34	2,520	9	340	351	20,959	12.8	59,714	4.8
2015 3	10	494	5	195	326	18,578	0.6	56,987	(1.0)
2014 ³	0	0	0	0	321	18,474	0.0	57,551	0.0
2013	24	1,798	14	442	321	18,474	8.5	57,551	5.1
2012	7	444	6	194	311	17,028	1.4	54,751	1.1
2011	21	1,452	9	200	310	16,787	9.1	54,152	4.9
2010	11	627	6	339	298	15,390	1.1	51,644	(0.6)
2009	74	3,744	57	1,835	293	15,230	3.2	51,978	(2.8)

¹Dollar amounts are in thousands except for the average annual benefit.

² End of year annual benefits are not equal to prior end of year annual benefits plus additions less removals due to beneficiary benefit changes, data changes, and COLA increases.

³ The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.





Accrued Service Service credited under the plan that was rendered before the

date of the actuarial valuation.

Actuarial Assumptions Estimates of future experience with respect to demographic or

economic events. Demographic assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term

average rate of inflation.

Actuarial Cost Method A mathematical budgeting procedure for allocating the dollar

amount of the actuarial present value of retirement plan benefits between future normal cost and actuarial accrued liability. Sometimes referred to as the "actuarial funding

method."

Actuarial Equivalent A single amount or series of amounts of equal value to another

single amount or series of amounts computed on the basis of a

given set of actuarial assumptions.

Actuarial Accrued Liability The difference between the actuarial present value of plan

benefits and the actuarial value of future normal costs. Also

referred to as "accrued liability" or "actuarial liability."

Actuarial Present Value The amount of funds currently required to provide a payment

or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest

and by probabilities of payment.

Amortization Paying off an interest-discounted amount with periodic

payments of interest and principal, as opposed to paying off

with lump sum payment.

Experience Gain (Loss) The difference between actual experience and actuarial

assumptions anticipated experience during the period between

two actuarial valuation dates.

Normal Cost The actuarial present value of retirement plan benefits

allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability The difference between actuarial liability and the actuarial

value of assets. Sometimes referred to as "unfunded accrued

liability" or "unfunded liability."

Most retirement plans have unfunded actuarial liability. They arise anytime new benefits are added and anytime an actuarial

loss is realized.